'MUD MOUND' STRUCTURES AND CORALLINE SPONGES FROM OSPREY REEF (QUEENSLAND PLATEAU, CORAL SEA, AUSTRALIA). *Memoirs of the Queensland Museum 44: 462. 1999:-* Osprey Reef is located at the NW tip of the Queensland Plateau. This reef represents an open oceanic reef platform on a drowned carbonate platform (Queensland Plateau). The metamorphic basement was drilled to a depth of about 450m below the sea floor (Betzler et al., 1995).

The reef caves of Osprey Reef were studied during two one-week expeditions in 1995 and 1996 using the DPI RV 'Gwendoline May'. At Osprey Reef a very patchy distribution of coralline sponges was observed. At some dive sites caves and reef internal surfaces (RIS) were free of this fauna, whereas a few hundreds of meters away, the walls of caves and the RIS were covered with coralline sponges. The reasons for this very patchy distribution are not presently clear. The structure of the cave community is the same as found on the GBR. The caves with abundant coralline sponges are mainly located between 15-20m depth.

At all sites, *Astrosclera* was the most dominant sponge, and similar to populations on the outer barrier reefs of the GBR, it sometimes lives in semi-dark conditions and is colored red or green. Its size never exceeds 5cm. *Spirastrella (Acantluochaetetes)* was rare at Osprey Reef compared to the GBR.

We found two new species of colonial variations of the 'sphinctozoan' sponge *Vaceletia* at Osprey Reef which still remain unnamed and largely undescribed, although preliminary notices of their occurrence and brief descriptions are provided by Reitner & Wörheide (1995) and Wörheide & Reitner (1996). These new 'sphinctozoans' are common in most of the caves and are mostly associated with *Vaceletia crypta*. They occur in only the darkest parts of the caves, and from their large biomass and 'insinuating habit' (i.e. growing between dead coral), they appear to be important components of reef structure. This type of coralline sponge shows similarities to Permo-Triassic reef building sphinctozoans.

At 250-300m depth aggregates of medium sized mound structures were observed. These structures are located at the NW steep escarpment of Osprey Reef and are ca. 10-20m long, 1-2m wide, and approximately 0.5-2m high. The surface is rigid and sometimes overgrown with sponges and gorgonians. Between the elongated mounds groove systems are developed where reef sediments are transported. Little sediment 'snow' is fixed by the mound surfaces. These mound structures are comparable with mieritie sponge reefs known from Mesozoic reef sites. ❒ *Porifera, coralline sponges, mud-mounds, Vaceletia, reef-building sphinctozoans, Osprey Reef, Coral Sea.*

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Joachim Reitner (email: jreitne@gwdg.de) & Gert Wörheide, Institut und Museum für Geologie und Paläontologie, Universität Göttingen, Goldschmidt-Strasse 3, D-37077 Göttingen, Germany; John N.A. Hooper, *Queensland Museum, P.O. Box 3300, South Brisbane, Qld, 4101, Australia; 1 June 1998.*